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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/551,466	04/17/2000	Sadao Takahashi	0557-4962-2	1714

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EXAMINER

MILLER, MARTIN E

ART UNIT PAPER NUMBER

2623

DATE MAILED: 10/06/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/551,466

Applicant(s)

TAKAHASHI, SADA0

Examiner

Martin Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24, 27-52 and 55-68 is/are allowed.
- 6) ☐ Claim(s) 25, 26, 53 and 54 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Information Disclosure Statement

1. The examiner has considered the IDS filed April 17, 2000, June 6, 2001, and July 9, 2003 and an initialed copy of each is included with this office action except for the IDS filed July 9, 2003.

Priority

2. The examiner acknowledges Applicant's foreign priority claim to Japanese applications 11-113761 and 2000-035946, the certified copies of which are in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 25, 26, 53 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al, (hereinafter Wang), US 5796876, and further in view of Bellinghausen, US 4599656.

As per claim 25, Wang teaches:

an image pickup unit which picks up an image of an object of a photograph (fig. 1, element 5, col. 4, ll. 20-25);

a screen division unit which divides the photographed object into a plurality of screens (line sensor, fig. 4, col. 4, ll. 33-50, each individual pixel can be considered a screen);

a photometry unit (CCD line sensor, col. 4, ll. 34-39) which measures light screens created by said screen division unit (col. 5, ll. 1-5);

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a block division unit which divides a multi-valued image picked up by said image pickup unit into blocks (col. 5, ll. 50-60);

a binarization threshold value setting unit which sets binarization threshold values used when binarizing the multi-valued image (col. 6, ll. 32-40);

a binarizing unit which binarizes a multi-valued image based on the binarization threshold values (fig. 2, element 21);

a photometric value smoothing unit which smoothes the photometric values measured by said photometry unit (fig. 2, elements 16, 17);

Wang does not specifically teach using the photometric smoothed values as the thresholding reference values, however, Bellinghausen teaches:

wherein said binarization threshold value setting unit sets binarization threshold values of blocks created by said block division unit based on photometric values smoothed by said photometric value setting unit (fig. 5, ll. 1-6).

It would have been obvious to one of ordinary skill in the art to use the filtered gray values as the values to be used to threshold the image values because spurious signals have been eliminated due to filtering and also the shading correction performed by Wang provides a uniform photometric value from which to set the binary threshold thereby reducing computing time and also reducing imaging errors associated with the imaging device.

As per claim 26, neither Wang nor Bellinghausen teaches a screen size and block size being equal. However, such a design choice would have been within the skill of one of ordinary skill in the art and therefore is obvious as a design choice. Wang teaches scanning each pixel and shading correcting it to the proper value while also binarizing each pixel through block

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processing. Bellinghausen teaches using selected pixels for filtering and then using those for thresholding each individual pixel afterwards.

As per claim 53 and 54, these claims recite substantially the same limitations as claims 25 and 26 above and analogous remarks apply.

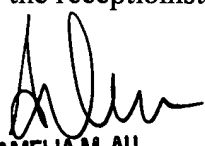
Allowable Subject Matter

5. Claims 1-24, 27-52, 55-68 are allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following U.S. patent(s) refer(s) to adaptive thresholding for grayscale images: Park et al., 5268773, Wang 5469267, White et al., 4578711, and Sakano, 4760464. The following Article refers to binary character extraction: Zhao et al, "Binary character/graphics image extraction: a new technique and six evaluation aspects", 11th IAPR International Conference on Pattern Recognition, September 1992.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Miller whose telephone number is (703) 306-9134. The examiner can normally be reached on Monday-Friday, 9am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


AMELIA M. AU
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MEU
9-29-03